

PATENT CLAIMS

1. A cast part for an internal combustion engine, the part being a cylinder crankcase (1), which has at least one guide duct (5, 5d, 9a, 9b), which leads a fluid medium to a required location, the duct being implemented in the form of a tube and being embedded inside the part when the latter is cast,

characterized in that the fluid medium is oil and the at least one guide duct (5, 5d, 9a, 9b) is an oil supply line to a crankshaft bearing (2) and/or camshaft bearing (3) to be lubricated as the required location.

2. The cast part according to Claim 1,

characterized in that it comprises multiple embedded guide ducts (5, 5d, 9a, 9b).

3. The cast part according to Claim 2,

characterized in that the embedded guide ducts (5, 9a, 9b) are implemented by a branched tube system (9).

4. The cast part according to Claim 2 or 3,

characterized in that the embedded guide ducts (5, 5d) are each introduced as an individual connection tube (7) for guiding the medium.

5. The cast part according to Claim 4,

characterized in that the connection tubes (7) are each bent and each have a bend (8) from which one section (7a) runs to a crankshaft bearing (2) and another section (7b) runs to the camshaft bearing (3), the bends (8) of the embedded connection tubes (7) each being located at positions at which a main oil duct (4) subsequently introduced through drilling runs, so that by introducing the main oil duct (4), the connection tubes (7) are drilled through and a connection of a connection tube (7) to the main oil duct (4) is thus produced in each case.

6. The cast part according to Claim 5,

characterized in that the connection tubes (7) are implemented as tailored to the contour course, advantageously bent "like a suitcase handle".

7. The cast part according to one of the preceding claims,

characterized in that the cylinder crankcase (1) comprises at least one guide duct (5c) for oil, embedded as a tube, which leads to a cylinder head.

8. The cast part according to Claim 7,

characterized in that the at least one guide duct (5c) to the cylinder head branches off from an individual connection tube (7).

9. The cast part according to Claim 7,

characterized in that the at least one guide duct (5c) to the cylinder head is a separately embedded tube which is supplied with oil directly from a drilled main oil duct.

10. The cast part according to Claim 7,

characterized in that the at least one guide duct (5c) to the cylinder head is part of an embedded tube system.

11. The cast part according to Claim 7,

characterized in that the at least one guide duct (5c) to the cylinder head discharges in the region of a bearing into a groove of a bearing ring and is supplied with oil from there.

12. The cast part according to one of the preceding claims,

characterized in that the cylinder crankcase (1) comprises at least one guide duct (5e) embedded as a tube, which forms a supply line (11) for piston cooling.

13. The cast part according to one of the preceding claims,

characterized in that the cylinder crankcase (1) comprises at least one guide duct (5g) embedded as a tube, which forms a fuel line (24) for supplying a fuel pump.

14. A cast part for an internal combustion engine, the part being a cylinder crankcase (1) which has at least one guide duct (5, 5e), which leads a fluid medium to a required location, the duct being implemented in the form of a tube and being embedded inside the part when the latter is cast,

characterized in that the fluid medium is oil and the at least one guide duct (5e) embedded as a tube forms a supply line (11) for piston cooling.

15. The cast part according to Claim 14,

characterized in that the cylinder crankcase (1) comprises at least one guide duct (5f) embedded as a tube, which forms a pressurized oil line (16) to the cylinder head.

16. The cast part according to Claim 14 or 15,

characterized in that the cylinder crankcase (1) comprises at least one guide duct (5g) embedded as a tube, which forms a fuel line (24) for supplying a fuel pump.

17. A cast part for an internal combustion engine, the part being a cylinder crankcase (1), which has at least one guide duct (5, 5f), which leads a fluid medium to a required location, the duct being implemented in the form of a tube and being embedded inside the part when the latter is cast,

characterized in that the fluid medium is oil and the at least one guide duct (5f) embedded as a tube forms a pressurized oil line (16) to the cylinder head.

18. The cast part according to Claim 17,

characterized in that the cylinder crankcase (1) comprises at least one guide duct (5g) embedded as a tube, which forms a fuel line (24) for supplying a fuel pump.

19. A cast part for an internal combustion engine, the part being a cylinder crankcase (1), which has at least one guide duct (5, 5g), which leads a fluid medium to a required location, the duct being implemented in the form of a tube and being embedded inside the part when the latter is cast,

characterized in that the fluid medium is fuel and the at least one guide duct (5g) embedded as a tube forms a fuel line (24) for supplying a fuel pump.

20. The cast part according to one of the preceding claims,

characterized in that the at least one embedded guide duct (5, 9a, 9b) is positioned in such a way that it runs partially or completely exposed in some sections.

21. The cast part according to one of the preceding claims,

characterized in that the at least one embedded guide duct (5, 9a, 9b) has different cross-sectional shapes in its course.

22. A method for manufacturing a cast part for an internal combustion engine, the part being a cylinder crankcase (1), which has at least one guide duct (5, 9a, 9b), which leads a fluid medium to a required location,

characterized in that, to form the at least one guide duct (5, 9a, 9b), a tube having the desired course is installed in a casting mold required for casting or is introduced into a casting core or is incorporated into a lost model and/or into its form medium cavity filler and subsequently the part is cast using the particular casting method to be employed.

23. The method according to Claim 22,

characterized in that, in the case of multiple embedded guide ducts (5, 5c, 5d, 9a, 9b), multiple tubes are previously manufactured to form a corresponding tube system (9), which is subsequently embedded.

24. The method according to Claim 22 or 23,

characterized in that the part is cast in a casting method using a lost mold.

25. The method according to Claim 22 or 23,

characterized in that the part is cast in a casting method using a permanent mold.

26. The method according to Claim 22 or 23,

characterized in that the part is cast in the lost foam method.